

WHAT IS CLAIMED IS:

1. An address translation device comprising:
an extraction unit extracting, from data
5 received via a first network, a fixed identifier
indicating a transmission source of the data;
a storage unit storing the fixed identifier and
an address, in a second network, of the transmission
source indicated by the fixed identifier by relating
10 fixed identifier and the address each other;
a reading unit reading the address, in the
second network, stored on the storage unit and
related to the fixed identifier extracted by the
extraction unit; and
15 a replacing unit replacing the address in the
second network read by the reading unit with the
source address of the data.

2. An address translation device according to
20 Claim 1, further comprising:
an identifier extraction unit extracting a
variable address of a terminal device connected to
the first network and the fixed identifier, from the
data received via the first network;
25 an identifier storage unit storing the variable
address and the fixed identifier extracted by the
identifier extraction unit by relating the variable

address and the fixed identifier;
a variable address acquisition unit acquiring,
from the storage unit and the identifier storage unit,
the variable address corresponding to a destination
5 address of the data addressed to the terminal device,
which contains, as a destination address, the address
in the second network received via the second
network; and
a rewriting unit rewriting the destination
10 address of the received data into the variable
address acquired by the variable address acquisition
unit.

3. A packet translation device, interposed
15 between an IPv6 (Internet Protocol version 6) network
and an IPv4 (Internet Protocol version 4) network,
for mutually translating an IPv4 packet and an IPv6
packet, comprising:
an extraction unit extracting, from the IPv6
20 packet, a fixed identifier indicating a transmission
source of the IPv6 packet;
a storage unit storing the fixed identifier and
an IPv4 address assigned to the transmission source
by relating the fixed identifier and an IPv4 address
25 each other;
a reading unit reading the IPv4 address stored
on the storage unit and related to the fixed

identifier extracted by the extraction unit; and
a packet translating unit translating the IPv6
packet into the IPv4 packet with the IPv4 address
read by the reading unit being set as a source
5 address.

4. A packet translation device according to
Claim 3, further comprising:
 - an identifier receiving unit receiving data
10 containing a care-of address of an IPv6 terminal
device and the fixed identifier indicating the IPv6
terminal device;
 - an identifier storage unit storing the care-of
address and the fixed identifier that have been
15 received by the identifier receiving unit by relating
to the care-of address and the fixed identifier each
other; and
 - a care-of address acquisition unit acquiring
the care-of address corresponding to a destination
20 address of the received IPv4 packet from the storage
unit and from the identifier storage unit,
wherein the packet translating unit translates
the IPv4 packet into an IPv6 packet with the care-of
address acquired by the care-of address acquisition
25 unit being set as a destination address.

5. A packet translation device according to

Claim 3 or 4, wherein the fixed identifier is a home address of the IPv6 terminal device.

6. A packet translation device according to
5 Claim 3 or 4, wherein the storage unit further stores a port number by relating the port number, the address and the fixed identifier each other, and wherein the reading unit reads the IPv4 address and the source port number stored on the storage unit
10 and related to the fixed identifier extracted by the extraction unit.

7. A packet translation device according to
Claim 6, wherein the care-of address acquisition unit
15 acquires, from the storage unit and the identifier storage unit, a care-of address corresponding to the destination address and the destination port number of the IPv4 packet received.

20 8. A packet translation system comprising:
a packet translation device, interposed between an IPv6 (Internet Protocol version 6) network and an IPv4 (Internet Protocol version 4) network, for mutually translating an IPv4 packet and an IPv6
25 packet, comprising:
an extraction unit extracting, from the IPv6 packet, a fixed identifier indicating a transmission

source of the IPv6 packet;

5 a storage unit storing the fixed identifier and an IPv4 address assigned to the transmission source by relating the fixed identifier and an IPv4 address each other;

10 a reading unit reading the IPv4 address stored on the storage unit and related to the fixed identifier extracted by the extraction unit;

15 a packet translating unit translating the IPv6 packet into the IPv4 packet with the IPv4 address read by the reading unit being set as a source address;

20 an identifier receiving unit receiving data containing a care-of address of an IPv6 terminal device and the fixed identifier indicating the IPv6 terminal device;

25 an identifier storage unit storing the care-of address and the fixed identifier that have been received by the identifier receiving unit by relating the care-of address and the fixed identifier each other; and

30 a care-of address acquisition unit acquiring the care-of address corresponding to a destination address of the received IPv4 packet from the storage unit and the identifier storage unit,

35 wherein the packet translating unit translates the IPv4 packet into an IPv6 packet with the care-of

address acquired by the care-of address acquisition unit being set as a destination address;

an IPv6 terminal device transmitting, to a home agent set in the device itself, a registration

5 message containing a care-of address and a home address that are assigned to the device itself; and

a home agent forwarding, upon receiving the registration message from the IPv6 terminal device, the received registration message to the packet

10 translation device.

9. A packet translation system comprising:

a packet translation device, interposed between an IPv6 (Internet Protocol version 6) network and an

15 IPv4 (Internet Protocol version 4) network, for mutually translating an IPv4 packet and an IPv6 packet, comprising:

an extraction unit extracting, from the IPv6 packet, a fixed identifier indicating a transmission

20 source of the IPv6 packet;

a storage unit storing the fixed identifier and an IPv4 address assigned to the transmission source by relating the fixed identifier and an IPv4 address each other;

25 a reading unit reading the IPv4 address stored on the storage unit related to the fixed identifier extracted by the extraction unit;

a packet translating unit translating the IPv6 packet into the IPv4 packet with the IPv4 address read by the reading unit being set as a source address;

5 an identifier receiving unit receiving data containing a care-of address of an IPv6 terminal device and the fixed identifier indicating the IPv6 terminal device;

10 an identifier storage unit storing the care-of address and the fixed identifier that have been received by the identifier receiving unit by relating the care-of address and the fixed identifier each other; and

15 a care-of address acquisition unit acquiring the care-of address corresponding to a destination address of the received IPv4 packet from the storage unit and the identifier storage unit,

20 wherein the packet translating unit translates the IPv4 packet into an IPv6 packet with the care-of address acquired by the care-of address acquisition unit being set as a destination address; and

25 an IPv6 terminal device for transmitting, to the packet translation device set in the device itself, a registration message containing a care-of address and a home address that are assigned to the device itself.